

## Claims

1. A control device for cylinder reducing operation in which at least one of cylinders of a multi-cylinder internal combustion engine are selectively inactivated, comprising a detector detecting engine output torque and judging if the cylinder reducing operation is to be executed while referring to the engine output torque detected with the detector; wherein criteria of the judgment of the execution of the cylinder reducing operation are modified through a learning process in which, when an engine is operated in the reduced cylinder mode, an output torque at a certain engine revolution and at a predetermined upper limit of throttle angle is set to the upper limit of engine output torque at the certain engine revolution for the judgment of the execution of the reduced cylinder operation.

15 2. A device according to claim 1, wherein the judgment of the execution of the cylinder reducing operation based upon the engine output torque is performed by setting out a two-dimensional map of engine revolution and the engine output torque, which map is divided into a normal operation region and a reduced cylinder operation region; and judging which 20 of the normal operation region and the reduced cylinder operation region an engine operation condition is fallen into.

3. A device according to claim 2, wherein the map is modified depending upon engine operating environments.

25 4. A device according to either of claims 1, wherein an output shaft of the multi-cylinder engine is operationally linked to an electric motor and an electric generator through a planetary gear and an axle of the planetary gear linked to the motor drives wheels, and the detector detecting engine 30 output torque is the generator.

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5. A device according to claim 4, wherein a variation of the output torque from the engine due to a variation of an inertial mass of motion in the engine is compensated based upon the detection of the output torque.

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